

Improving understanding of rural medical needs and outcomes. Rural residents remain less healthy than urban residents, even though urban and rural residents use comparable amounts of health care. Improving the health status of rural residents will require a better understanding of rural health care outcomes as well as improvements in the nonmedical aspects of rural life, such as housing, sanitation, and water supply.

Meeting the needs of providers. Expanded health care coverage will improve the financial condition of rural health care providers, but many rural areas will still face obstacles in providing adequate health care facilities and personnel. Such obstacles can result from low incomes, low population density that makes it difficult for providers to achieve adequate economies of scale, or geographic or weather barriers that impede transportation and communication. Special provisions will be required for these areas and the providers serving them. Such provisions can take the form of government subsidies to compensate for low revenues, or organizational innovations that take account of special rural circumstances. Due to the relative importance of Medicaid and Medicare coverage in rural areas, adequate provider reimbursement under these programs is important both for meeting the needs of providers and for ensuring that individuals covered under these programs have adequate access to health care services.

The research reviewed in this report suggests that policy initiatives to aid rural providers might need to be narrowly tailored to achieve specific goals. For example, tax incentives for physicians practicing in rural areas might have different effects on the location decisions of physicians already established in rural areas than on those of physicians considering rural practice.

Encouraging innovation. New medical technology and the changes in health care financing and delivery that could result from health care reform will bring both new demands and new opportunities for health care providers. These changes will require new institutional responses. These responses could include increased networking among both hospitals and physicians and sharing of personnel and facilities. It will be the responsibility of government to aid in the development of such innovations and assist in their support.

Rural health care conditions are improving, but continue to lag behind what is achievable and necessary. The health care reform debate represents an unprecedented opportunity for the nation to rethink the terms on which it offers health care -- often literally the gift of life -- to its citizens. For this effort to succeed, the rural voice must be heard.

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ABOUT THE AUTHOR AND THE SPONSOR

Sophie M. Korczyk is president of Analytical Services and a financial economist and consultant specializing in employee benefits, tax policy, and financial regulation. She was formerly Senior Research Associate at the Employee Benefit Research Institute, Director of Benefits Research at Peat Marwick, and has held federal government and academic positions. She holds a Ph.D. in economics from Washington University (St. Louis) and has written extensively on employee benefits issues.

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The mission of the **National Rural Electric Cooperative Association** is to serve, represent, and provide leadership to cooperative/consumer-owned rural electric systems and allied organizations in their efforts to enhance the quality of life in their communities. The approximately 1,000 rural electric systems operating in 46 states serve over 25 million farm and rural individuals in 2,600 of our nation's 3,100 counties. Various programs administered by NRECA provide pension and welfare benefits to over 125,000 rural electric employees, dependents, directors, and consumer-members in those localities.



**National Rural Electric
Cooperative Association**

1800 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Telephone (202) 857-9500

To: Lygeia Ricciardi
Federal Communications Commission
Office of Plans and Policy

From: Tom Morris
Office of Rural Health Policy
Health Resources & Services Administration

RE: Response Material on Health Care Telecommunications for the Joint Board

Please accept the following material as a response to the call for data relating to health care telecommunications and the universal service provision of the Telecommunications Act of 1996. Enclosed please:

- Spread-sheet summaries of data submitted from Office of Rural Health Policy telemedicine grantees
- Additional responses to the FCC questionnaire from several of our telemedicine grantees [High Plains (CO) Rural Health Network and Allina (MN) Health Systems]
- Supplemental information from several ORHP grantees related to data previously submitted [Mid-Nebraska Telemedicine Network, McKennan Health Systems (SD), Kentucky Telecare and the Eastern Montana Telemedicine Network]
- Examples of urban-rural telecommunication rate charge data from three ORHP grantees [Mountain Doctor (WV) Television, Eastern Montana Telemedicine Network, and Mid-Nebraska Telemedicine Network]

Spread-Sheet Summaries

Appendix A

Supplemental Charts for Bassett Healthcare

Table 1

Equipment Distribution

Location	Nearest City of Pop ≥ 50,000	Telecom service Provider	Level of Telecom Service in Use	Monthly Charge	Installation Fee
M.I.B.H., Cooperstown	Utica	AT&T	T1, POTS	\$4,087	\$963
O'Connor Hosp., Delhi	Binghamton	AT&T	T1, *, POTS	\$2,516	\$963
BHSC, Cobleskill	Albany	AT&T	T1, *, POTS	\$2,198	\$963
Blonholm HC	Albany	Middleburgh	POTS, #	#	#
Canajoharie HC	Utica	Citizens	POTS, #	#	#
Cherry Valley HC	Utica	NYNEX	2 x 56, POTS	\$910	\$2,462
Cobleskill HC	Albany	NYNEX	2 x 56, POTS	\$267	\$2,675
Delhi HC	Binghamton	Delhi	POTS, #	#	#
Edmeston HC	Utica	NYNEX	2 x 56, POTS	\$156	\$1,227
Gloversville HC	Albany	Citizens	POTS, #	#	#
Hamilton HC	Utica	NYNEX	POTS, #	#	#
Herkimer HC	Utica	NYNEX	2 x 56, POTS	\$175	\$1,104
Upstate Home	Utica	NYNEX	POTS, #	#	#
Liberty HC	New York City	NYNEX	POTS, #	#	#
Morris HC	Utica	Citizens	POTS, #	#	#
Norwich	Binghamton	Citizens	POTS, #	#	#
Oneonta HC	Albany	NYNEX	2 x 56, POTS	\$150	\$1,717
Oneonta S & S	Albany	NYNEX	POTS, #	#	#
Richfield Springs HC	Utica	NYNEX	2 x 56, POTS	\$156	\$1,160
Schoharie HC	Albany	Middleburgh	POTS, #	#	#
Sharon Springs HC	Albany	NYNEX	2 x 56, POTS	\$173	\$1,469
Stamford HC	Binghamton	NYNEX	2 x 56, POTS	\$173	\$1,097
Walton HC	Albany	Citizens	POTS, #	#	#

* Uses part of T1, carrier does not provide fractional T1 rates.

These sites have not been activated for videoconferencing yet.

** Monthly Charges given for video only.

Table 2

Within NY State "Tariff #4" video call charges per minute 112kbs.					
Hours:	AT&T charges:	If calling AT&T to NYNEX no additional charges:	If calling from NYNEX to AT&T add:	If calling from NYNEX to AT&T to NYNEX add:	If calling from NYNEX to NYNEX add .02 cents:
7am to 7pm	0.344	0	0.08	0.16	local phone rates
7pm to 7am	0.314	0	0.08	0.16	local phone rates
Examples:	8am	8am	8am	8am	8am
Exchange	700 to 700	700 to 518	518 to 700	518 to 607	518 to 518
Cost in cents	34.4 per min.	34.4 per min.	50.4 per min.	.75 per min	local phone + .02 per min

Telecommunications Data

Key:
Nearest City:
 The nearest city in the state to the spoke or receiving site with a population equal to or greater than 50,000.
Distance: Miles from the spoke or receiving site to the nearest city.
Email/Internet:
 Does the receiving or spoke site have access to email or internet.
 (Often, the urban hubs will have these services as part of the larger organization.)
 N/A means not available.

From the Office of Rural Health Policy Grantees				
State	Nearest City	Distance	Email	Internet
NE				
Good Samaritan				
Hub-Kearney	Lincoln	125	No	No
Cozad	Lincoln	180	No	No
Cambridge	Lincoln	200	No	No
Callaway	Lincoln	201	No	No
Broken Bow	Lincoln	197	No	No
Sargent	Lincoln	170	No	No
Norton, KS	N/A	N/A	N/A	N/A
Phillipsburg, KS	N/A	N/A	N/A	N/A
MT				
Southwestern Montana Telepsychiatry Network				
Hub-Helena	Billings	990	N/A	N/A
Boulder	Billings	116	N/A	N/A
Warm Springs	Billings	100	N/A	N/A
Bozeman	Billings	142	N/A	N/A
Anaconda	Billings	105	N/A	N/A
Eastern Montana Telemedicine Network				
Hub-Billings	Not applicable		Yes	N/A
Colstrip	Billings	130	No	Yes
Glendive	Billings	222	No	No
Sidney	Billings	272	No	No
Culbertson	Billings	309	No	No
Helena	Great Falls	89	No	No
Glasgow	Billings	279	No	No
Baker	Billings	225	No	No
SD				
McKenna Health Services				
Hub-Sioux Falls	Not Applicable		N/A	N/A
Flaundreau	Sioux Falls	55	No	No
Yankton	Sioux Falls	65	No	No
Mitchell	N/A	N/A	No	No
Dakota Health Network				
Hub-Aberdeen	Sioux Falls	200	Yes	No
Bowdle	Sioux Falls	250	Yes	No
Webster	Sioux Falls	150	Yes	No
IHS/Sisseton	Sioux Falls	180	Yes	No
Sisseton Hosp.	Sioux Falls	180	Yes	No
Hand County	Sioux Falls	178	Yes	No
Selby	Sioux Falls	76	Yes	No
Ellendale	Bismarck	163	Yes	No

Telecommunications Data

Key:
Nearest City:
 The nearest city in the state to the spoke or receiving site with a population equal to or greater than 50,000.
Distance: Miles from the spoke or receiving site to the nearest city.
Email/Internet:
 Does the receiving or spoke site have access to email or internet.
 (Often, the urban hubs will have these services as part of the larger organization.)
 N/A means not available.

State	Nearest City	Distance	Email	Internet
Sioux Valley Health Systems Telemedicine Network				
Hub-Sioux Falls	Not Applicable		N/A	N/A
Hub-Vermillion	Sioux Falls	55 miles	No	No
Viborg	Sioux Falls	45 miles	No	No
Canton	Sioux Falls	25 miles	No	No
Chamberlain	Sioux Falls	150 miles	No	No
Webster	Sioux Falls	120 miles	No	No
Worthington, MN	N/A	60 miles	No	No
MN				
University of Minnesota Telemedicine Demonstration				
Hub-Minneapolis	Not Applicable		yes	yes
Wadena	Fargo	50	yes	yes
Staples	St. Cloud	90	yes	yes
Moose Lake	Duluth	60	yes	yes
Hibbing	Duluth	60	N/A	N/A
LA				
S. Cameron Hosp. Rural Health Telemedicine Network				
Hub-New Orleans	Not Applicable		N/A	N/A
Hub-Lake Charles	Not Applicable		N/A	N/A
Cameron	Lake Charles	51	No	No
DeQuincy	Lake Charles	45	Yes	Yes
Iota	Lafayette	50	No	No
Acadia	Lafayette	25	No	No
* Dual hubs: New Orleans is primary and Lake Charles is secondary				
KY				
Kentucky Telecare				
Hub-Lexington	Not Applicable		Yes	N/A
Harrodsburg	Lexington	25	Yes	Yes
Berea	Lexington	35	Yes	Yes
McKee	Lexington	55	Yes	Yes
Morehead	Lexington	60	Yes	Yes
Prestonburg	Lexington	105	Yes	Yes
Hazard	Lexington	120	Yes	Yes
Harlan	Lexington	140	Yes	Yes
Pikeville	Lexington	120	Yes	Yes
Whitesburg	Lexington	145	Yes	Yes
VA				
Appal-Link*	Roanoke	50-200	No	No
* Range of mileage for spoke/receiving sites from nearest city				

Telecommunications Data

Key:
State: State and town of network sites.
Bandwidth: Transmission bandwidth in megabits per second or kilobits per second.
Type: Type of telecommunications infrastructure used.
Charge Data:
Monthly: The per-month charge paid by each site.
Usage: Is there a usage charge?
Distance: Is there a distance component such as per-mile fee?
Installation: Is there an installation fee?
Tariff and Discount: Is the charge a regular tariffed rate, or is there a discount from the provider of telecommunications?
N/A= Not Available

GOOD SAMARITAN								
State	Bandwidth	Type	Charge Data					
			Monthly	Usage	Dist.	Installation	Tariff/Discount	
NE	Good Samaritan							
				.04/ min. over 10 hrs.	Yes	Waived	No	\$4,000-5000
	Kearney (Hub)	1.54 Mbps	T-1	\$90.00				
	Cozad	1.54 Mbps	T-1	\$11,500.00	No	Yes	Waived	No \$4,000-5,000
	Cambridge	1.54 Mbps	T-1	\$11,500.00	No	Yes	Waived	No \$4,000-5,000
	Callaway	1.54 Mbps	T-1	\$11,500.00	No	Yes	Waived	No \$4,000-5,000
	Broken Bow	1.54 Mbps	T-1	\$11,500.00	No	Yes	Waived	No \$4,000-5,000
	Sargent	1.54 Mbps	T-1	\$11,500.00	No	Yes	Waived	No \$4,000-5,000
	Norton (KS)	1.54 Mbps	T-1	\$370.20	.04/ min. over 10 hrs.	Yes	Waived	No
	Phillipsburg (KS)	1.54 Mbps	T-1	\$11,500.00	No	Yes	Waived	No \$4,000-5,000
South Dakota	McKenna Health Services							
	Sioux Falls (Hub)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Flandreau	384 kbps	ISDN	\$338.00	.41-.49/minute	No	\$320.00	20% of Usage
	Yankton	128 kbps	ISDN	\$188.00	.41-.49/minute	Yes	\$80.00	20% of Usage
	Mitchell	384 kbps	ISDN	\$252.00	.37/minute	Yes	\$320.00	.23/minute
	Dakota Health Network							
	Aberdeen (Hub)	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
	Bowdle	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
	Webster	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
	IHS Hosp./Sisseton	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
	Sisseton	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
	Hand County	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
	Selby	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No
Ellendale	384 kbps	ISDN	\$90.00	\$80.00	No	\$80.00	Yes No	

Telecommunications Data

Key:
State: State and town of network sites.
Bandwidth: Transmission bandwidth in megabits per second or kilobits per second.
Type: Type of telecommunications infrastructure used.
Charge Data:
Monthly: The per-month charge paid by each site.
Usage: Is there a usage charge?
Distance: Is there a distance component such as per-mile fee?
Installation: Is there an installation fee?
Tariff and Discount: Is the charge a regular tariffed rate, or is there a discount from the provider of telecommunications?
 N/A= Not Available

State	Bandwidth	Type	Charge Data						
			Monthly	Usage	Distance	Installation	Tariff/Discount		
SD	Sioux Valley Health System Telemedicine Network								
	Sioux Falls (Hub)	384 Kbps	ISDN	\$84.00	\$20/hr	No	\$85-555	No	5-15%
	Vermilion	384 Kbps	ISDN	\$80.84	\$18/hr	No	\$85-300	No	5-15%
	Viborg	384 Kbps	ISDN	\$80.00	.02/min.	No	\$85-450	N/A	N/A
	Canton	384 Kbps	ISDN	\$80.00	.02/min.	No	\$300.00	N/A	N/A
	Chamberlain	384 Kbps	ISDN	\$84.00	\$20/hr	No	\$340.00	No	5-15%
	Webster	384 Kbps	ISDN	Yes (N/A)	Yes (N/A)	No	Yes (N/A)	N/A	N/A
	Worthington (MN)	384 Kbps	ISDN	\$339.78	Yes (N/A)	No	33.70 per lin	N/A	N/A
NY	Bassett Healthcare								
	Cooperstown (Hub)	N/A	T-1	\$4,087.00	*	None	\$983.00	Yes	N/A
	Delhi	N/A	T-1	\$2,516.00	*	None	\$983.00	Yes	N/A
	Cobleskill	N/A	T-1	\$2,198.00	*	None	\$983.00	Yes	N/A
	Cherry Valley	N/A	POTS	\$310.00	*	None	\$2,462.00	Yes	N/A
	Cobleskill	N/A	POTS	\$267.00	*	None	\$2,675.00	Yes	N/A
	Edmeston	N/A	POTS	\$158.00	*	None	\$1,227.00	Yes	N/A
	Herkimer	N/A	POTS	\$175.00	*	None	\$1,104.00	Yes	N/A
	Oneonta	N/A	POTS	\$158.00	*	None	\$1,717.00	Yes	N/A
	Sharon Springs	N/A	POTS	\$173.00	*	None	\$1,469.00	Yes	N/A
	Stamford	N/A	POTS	\$173.00	*	None	\$1,097.00	Yes	N/A
(* Based on Time and Carrier: See chart in Appendix A)									
MT	Southwestern Montana Telepsychiatry Network								
	Helena (Hub)	N/A	T-1	\$482.31	\$80-90/hr	N/A	\$1,200.00	0-80/	Yes
	Boulder	N/A	T-1	\$1,201.00	\$80-90/hr	N/A	\$1,800.00	0-80/	No
	Warm Springs	N/A	T-1	\$1,272.00	\$80-90/hr	N/A	N/A	0-80/	No
	Bozeman	384 kbps	ISDN	\$138.18	\$80-90/hr	N/A	\$900.00	0-80/	No
	Anaconda	N/A*	N/A*	\$809.52	\$60-90/hr	N/A	\$1,200.00	0-80/	No
* Site is not yet running									

Telecommunications Data

Key: State: State and town of network sites. Bandwidth: Transmission bandwidth in megabits per second or kilobits per second. Type: Type of telecommunications infrastructure used. Charge Data: Monthly: The per-month charge paid by each site. Usage: Is there a usage charge? Distance: Is there a distance component such as per-mile fee? Installation: Is there an installation fee? Tariff and Discount: Is the charge a regular tariffed rate, or is there a discount from the provider of telecommunications? N/A= Not Available	State	Bandwidth	Type	Monthly	Usage	Distance	Installation	Tariff/Discount
	MT	Eastern Montana Telemedicine Network						
	Billings BH (Hub)	384 Kbps	N/A	\$200.00	N/A	\$12.04/mile	\$1,200.00	Yes No
	Billings Two (Hub)	384 Kbps	N/A	\$1,945.40	N/A	\$12.04/mile	\$1,200.00	Yes No
	Colstrip	384 Kbps	N/A	\$934.40	N/A	\$12.04/mile	\$1,200.00	Yes No
	Glendive	384 Kbps	N/A	\$1,188.68	N/A	\$12.04/mile	\$1,200.00	Yes No
	Skidney	384 Kbps	N/A	\$922.00	N/A	\$12.04/mile	\$1,200.00	Yes No
	Culbertson	384 Kbps	N/A	\$1,001.05	N/A	\$14.99	\$1,200.00	Yes No
	Glasgow	384 Kbps	N/A	\$1,631.34	N/A	\$15.08	\$1,200.00	No 15%
	Baker	384 Kbps	N/A	\$767.73	N/A	N/A	\$850.00	No 50%
	Billings dial up *	384 Kbps	N/A	\$486.92	\$36/hr	N/A	\$600.00	No 36%
	Helena dial up*	384 Kbps	N/A	\$486.92	\$36/hr	N/A	\$600.00	No 36%
	* Other carriers (In addition to its U.S. West lines, EMTN also has dial up access through AT&T)							
	LA	South Cameron Hospital Rural Health Outreach Telemedicine Grant						
	New Orleans (Hub)*	N/A	T-1	\$199.00	None	None	Yes	No No
	Lake Charles (Hub)*	N/A	T-1	\$373.00	None	None	Yes	No No
	Cameron	N/A	T-1	\$2,392.00	None	None	Yes	No No
	DeQuincy	N/A	T-1	\$674.00	None	None	Yes	No No
	Iota	N/A	T-1	\$785.00	None	None	Yes	No No
	Arcadia	N/A	T-1	\$840.00	None	None	Yes	No No
	Note: The network does face an added shared network charge of \$3,343 a month							
	* Dual hubs: New Orleans is primary and Lake Charles is secondary							
	KY	Kentucky Telecare						
	Lexington (Hub)	N/A	T-1	\$665.00	None	None	None	No No
	Harrodsburg	N/A	T-1	\$665.00	None	None	None	No No
	Berea	N/A	T-1	\$665.00	None	None	None	No No
	McKee	N/A	T-1	\$665.00	None	None	None	No No
	Morehead	N/A	T-1	\$665.00	None	None	None	No No
	Prestonburg	N/A	T-1	\$665.00	None	None	None	No No
	Hazard	N/A	T-1	\$665.00	None	None	None	No No
	Harlan	N/A	T-1	\$665.00	None	None	None	No No

Telecommunications Data

Key:
State: State and town of network sites.
Bandwidth: Transmission bandwidth in megabits per second or kilobits per second.
Type: Type of telecommunications infrastructure used.
Charge Data:
Monthly: The per-month charge paid by each site.
Usage: Is there a usage charge?
Distance: Is there a distance component such as per-mile fee?
Installation: Is there an installation fee?
Tariff and Discount: Is the charge a regular tariffed rate, or is there a discount from the provider of telecommunications?
N/A= Not Available

State	Bandwidth	Type	Charge Data					
			Monthly	Usage	Distance	Installation	Tariff/Discount	
Pikeville	N/A	T-1	\$885.00	None	None	None	No	No
Whitesburg	N/A	T-1	\$885.00	None	None	None	No	No
Note: Within the 808 area code, each of the Kentucky Telecare T-1 lines is priced without regard to distance or usage at a flat rate of \$885 a month through a state contract negotiated by the Kentucky Information Highway (KI-H). As a result, there is no urban-rural charge variance for state agencies.								
MN	University of Minnesota Telemedicine Project							
	Minneapolis (Hub)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Red Wing	N/A	T-1	\$1,159.00	\$28/hr	\$28/hr	\$1,500.00	Yes No
	Hibbing	N/A	T-1	\$1,158.00	\$35/hr	\$35/hr	\$1,500.00	Yes No
	Moose Lake	N/A	T-1	\$958.00	\$35/hr	\$35/hr	\$1,500.00	Yes No
	Staples	N/A	T-1	\$500.00	\$35/hr	\$35/hr	\$1,500.00	Yes No
	Univ. of Minn	N/A	T-1	\$365.00	\$15/hr	\$35/hr	\$1,500.00	Yes No
	Wadena	N/A	T-1	\$250.00	\$35/hr	\$35/hr	\$1,500.00	Yes No
	Allina Health System/Rural Health Alliance Telemedicine Network							
	Minneapolis 1 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	Minneapolis 2 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	Minneapolis 3 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	Minneapolis 4 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	St. Paul 1 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	St. Paul 2 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	Minneapolis 5 (Hub) **	N/A	T-1	\$900.00	No	*	\$2,500-2,700	Yes No
	Elbow Lake	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Wheaton	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Glenwood	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Morris	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Alexandria	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Starbuck	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Long Prairie	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Sauk Centre	N/A	T-1	\$1,100.00	No	*	\$2,500-2,700	Yes No
	Cambridge	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes No
	Buffalo	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes No
	New Ulm	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes No

Telecommunications Data

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Usage: Is there a usage charge?
Distance: Is there a distance component such as per-mile fee?
Installation: Is there an installation fee?
Tariff and Discount: Is the charge a regular tariffed rate, or is there a discount from the provider of telecommunications?
N/A= Not Available

State	Bandwidth	Type	Charge Data					
MN			Monthly	Usage	Distance	Installation	Tariff/Discount	
Owatonna	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
Shakopee	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
River Falls	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
LeSeur	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
St. Peter	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
Northfield	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
Litchfield	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
Mora	N/A	T-1	\$1,300.00	No	*	\$2,500-2,700	Yes	No
Note: Allina Health Systems has a multiple hub system that covers both rural and urban areas. MSP=Minneapolis								
Note: Network also faces a hub charge of \$560 per month from Sauk Centre to Minneapolis and Owatonna to Minneapolis								
* There is a distance component for connecting outside the network. The network pays an annual minimum fee of \$4,000/ year for the gateway services. For example, a connection with the University of Minnesota incurs a charge of \$15 per hour. Longer cross connections are more expensive depending on the distance.								
** (Hub Key) Minneapolis 1=Minneapolis Children's Hospital; Minneapolis 2: Abbott Northwestern; Minneapolis 3: Mercy Hospital; Minneapolis 4=Unity Hospital; St. Paul 1= St. Paul's Children's Hospital; St. Paul 2=United Hospital; Minneapolis 5=Allina								
CO								
High Plains Rural Health Network								
Greeley (Hub)	N/A	T-1	\$1,208.36	N/A	N/A	\$626.50	N/A	N/A
Fort Collins (Hub)		No	\$1,305.00	N/A	N/A	\$626.50	N/A	N/A
Denver 1 (Hub)		No	\$200.00	N/A	N/A	\$626.50	N/A	N/A
Denver 2 (Hub)			\$245.00	N/A	N/A	\$626.50	N/A	N/A
Haxtun		No	\$924.61	N/A	N/A	\$797.55	N/A	N/A
Holyoke		No	\$2,127.20	N/A	N/A	\$700.00	N/A	N/A
Sterling		No	\$1,031.45	N/A	N/A	\$626.50	N/A	N/A
Burlington		No	\$177.26	N/A	N/A	\$616.50	N/A	N/A
Fort Morgan		No	\$98.00	N/A	N/A	\$1,483.75	N/A	N/A
Brush		No	\$526.50	N/A	N/A	\$1,427.50	N/A	N/A
Cheyenne Wells		No	\$1,136.11	N/A	N/A	\$606.00	N/A	N/A
Yuma		No	\$1,330.46	N/A	N/A	\$616.50	N/A	N/A
Wray		No	\$1,308.00	N/A	N/A	\$606.00	N/A	N/A
Vail		No	\$1,656.75	N/A	N/A	\$626.50	N/A	N/A

Telecommunications Data

Key:
State: State and town of network sites.
Bandwidth: The level of tele-communications used in megabits per second or kilobits per second.
Type: Type of tele-communications infrastructure used.
Charge Data:
Monthly: The per-month charge paid by each site.
Usage: Is there a usage charge?
Distance: Is there a distance component such as per-mile fee?
Installation: Is there an installation fee?
Tariff/Discount: Is the charge a regular tariffed rate, or is there a discount from the provider of tele-communications?
N/A= Not Available

State	Bandwidth	Type	Charge Data					
			Monthly	Usage	Distance	Installation	Tariff/Discount	
CO								
Loveland		No	\$733.20	N/A	N/A	\$826.50	N/A	N/A
Estes Park		No	\$928.50	N/A	N/A	\$826.60	N/A	N/A
Limon		No	\$2,094.80	N/A	N/A	\$826.50	N/A	N/A
Note: High Plains Rural Health Network has multiple hubs or specialty referral sites within its network.								
Hub Key: Denver 1= St. Anthony Central Hospital; Denver 2: Presbyterian/St. Luke's Hospital								

The Urban-Rural Differential

For Basic T-1 Service

Network	Urban		Rural
Mid-Nebraska Telemedicine Network	\$633	➡	\$2,000
Mountain Doctor Television, West Virginia	\$475.20	➡	\$1001.55
Eastern Montana Telemedicine Network	\$200	➡	\$9,445

COMPARISON OF URBAN AND RURAL DS1 RATE, TARIFFS ATTACHED

For a DS1 hi-capacity line, the rate average of the Tier 1 companies (defined for this use as the Bell companies, GTE United and Cincinnati Bell) is \$17.28 per mile, based on the 8/96 filed rates. (The total charge would also include two channel terminations @ \$185.50 each and two channel mileage terminations' @ \$47.38 each.)

The average loop length predicated on the 1996 Price CAP Tariff Review plan figures for all BOCs -Urban Zone 1 data is six miles. This would best estimate the average distance in an urban environment.

The figures below are used to compare DS1 rates for telemedicine access.

All BOCs	NECA Rates
<u>Urban Zone 1</u>	<u>(as of 8/96)</u>

A **6-mile** DS1 for a BOC in Density Zone 1 would be:

$\$17.28 \times 6 \text{ mile} = \$103.68, + 2 \text{ CTs } \$371.00 + 2 \text{ CMTs } \$94.76 = \text{Total } \mathbf{\$569.44}$

A **30-mile** DS1 for a BOC in Density Zone 1 would be:

$\$17.28 \times 30 \text{ miles} = \$518.40, + 2 \text{ CTs } \$371.00 + 2 \text{ CMTs } \$94.76 = \text{Total } \mathbf{\$984.16}$

For a DS1 hi-capacity line, the rate for the small, rural companies that are members of the NECA Traffic Sensitive Pool, is \$19.46 per mile, based on an 8/96 filed rates. (The total charge would also include 2 channel terminations @ \$176.25 each and 2 channel mileage terminations' @ \$101.46 each).

A **6-mile** DS1 for a TS Pool Member would be:

$\$19.46 \times 6 \text{ mile} = \$116.76, + 2 \text{ CTs } \$371.00 + 2 \text{ CMTs } \$94.76 = \text{Total } \mathbf{\$672.18}$

A **30-mile** DS1 for a TS Pool Member would be:

$\$19.46 \times 30 \text{ miles} = \$583.80, + 2 \text{ CTs } \$352.50 + 2 \text{ CMTs } \$202.92 = \text{Total } \mathbf{\$1,139.22}$

A **50-mile** DS1 for a TS Pool Member would be:

$\$19.46 \times 50 \text{ miles} = \$973.00, + 2 \text{ CTs } \$352.50 + 2 \text{ CMTs } \$202.92 = \text{Total } \mathbf{\$1,528.42}$

A **100-mile** DS1 for a TS Pool Member would be:

$\$19.46 \times 100 \text{ miles} = \$1,946.00, + 2 \text{ CTs } \$352.50 + 2 \text{ CMTs } \$202.92 = \text{Total } \mathbf{\$2,501.42}$

A **200-mile** DS1 for a TS Pool Member would be:

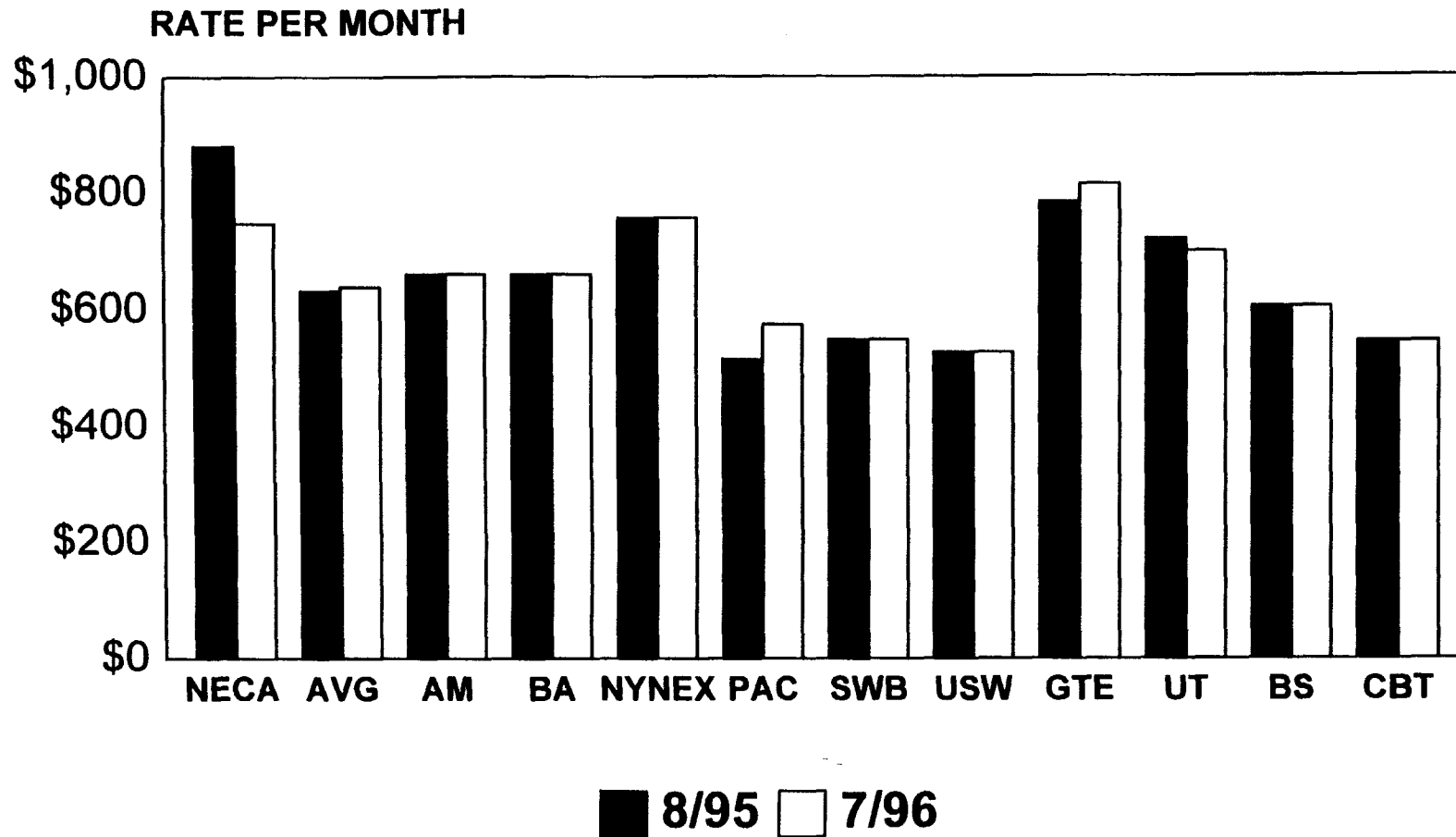
$\$19.46 \times 200 \text{ miles} = \$3,892.00, + 2 \text{ CTs } \$352.50 + 2 \text{ CMTs } \$202.92 = \text{Total } \mathbf{\$4,447.42}$

A **300-mile** DS1 for a TS Pool Member would be:

$\$19.46 \times 300 \text{ miles} = \$5,838.00, + 2 \text{ CTs } \$352.50 + 2 \text{ CMTs } \$202.92 = \text{Total } \mathbf{\$6,393.42}$

DS1 HI-CAPACITY RATES

TOTAL CIRCUIT @ 10 MILES

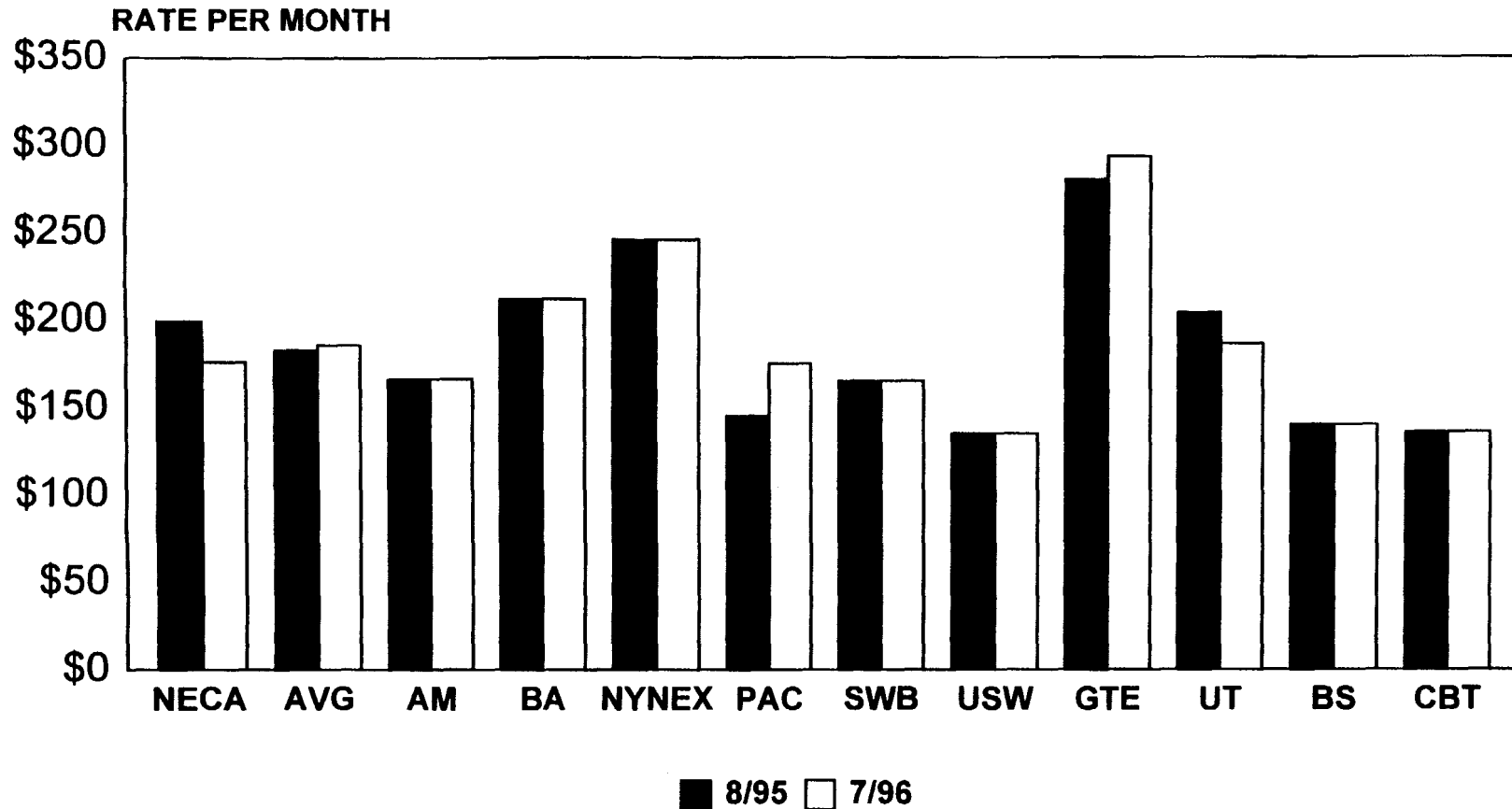


DS1: 2CTs + 10 CMF + 2 CMTs

NECA Rate Development Group - August 1996

CHART # 7

DS1 HI-CAPACITY CHANNEL TERMINATION RATE



DS1: CT

NECA Rate Development Group - August 1996

CHART # 7A